

12AD6

Pentagrid Converter

7-PIN MINIATURE TYPE

For Automobile Radio Receivers Operating
Directly from 6-Cell Storage Batteries

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage range (DC). 10 to 15.9 volts

*For longest life, it is recommended that the heater be
operated within the voltage range of 11 to 14 volts.*

Current (Approx.) at 12.6 volts 0.15 amp

Direct Interelectrode Capacitances:

	Without External Shield	With External Shield ^a	
Grid No.3 to all other electrodes (RF input)	7	7	$\mu\mu\text{f}$
Plate to all other electrodes (Mixer output)	7	12	$\mu\mu\text{f}$
Grid No.1 to cathode & grid No.5, plate, grid No.3, and heater (Oscillator input)	3.2	3.2	$\mu\mu\text{f}$
Grid No.3 to plate.	0.3 max.	0.26 max.	$\mu\mu\text{f}$
Grid No.3 to grid No.1.	0.15 max.	0.15 max.	$\mu\mu\text{f}$
Grid No.1 to grid No.2 & grid No.4	2.2	2.2	$\mu\mu\text{f}$
Grid No.2 & grid No.4 to all other electrodes except grid No.1 (Oscillator output).	11	11	$\mu\mu\text{f}$

Mechanical:

Operating Position. Any

Maximum Overall Length. 2-1/8"

Maximum Seated Length 1-7/8"

Length, Base Seat to Bulb Top (Excluding tip). . . 1-1/2" $\pm$ 3/32"

Diameter. 0.650" to 0.750"

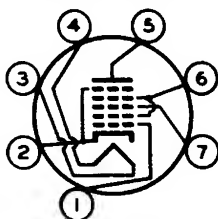
Dimensional Outline See *General Section*

Bulb. T5-1/2

Base. Small-Button Miniature 7-Pin (JEDEC No.E7-1)

Basing Designation for BOTTOM VIEW. 7CH

Pin 1 - Grid No.1
Pin 2 - Cathode,
Grid No.5
Pin 3 - Heater
Pin 4 - Heater



Pin 5 - Plate
Pin 6 - Grid No.2,
Grid No.4
Pin 7 - Grid No.3

← Indicates a change.



RADIO CORPORATION OF AMERICA
Electron Tube Division
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DATA
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CONVERTER

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE.	16 max.	volts
GRID-No.3 (CONTROL-GRID) VOLTAGE:		
Negative-bias value.	16 max.	volts
Positive-bias value.	0 max.	volts
GRIDS-No.2 & No.4 (SCREEN-GRID) SUPPLY VOLTAGE.	16 max.	volts
GRIDS-No.2 & No.4 VOLTAGE.	16 max.	volts
TOTAL CATHODE CURRENT.	20 max.	ma
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode. . .	16 max.	volts
Heater positive with respect to cathode. . .	16 max.	volts

Typical Operation and Characteristics:

With separate excitation^b and with heater voltage of 12.6 volts

Plate Voltage.	10.6	12.6	14.6	volts
Grids-No.2 & No.4 Voltage.	10.6	12.6	14.6	volts
Grid-No.3 Supply Voltage	0	0	0	volts
Grid-No.3 Resistor	2.2	2.2	2.2	megohms
Peak-to-Peak Grid-No.1 (Oscillator-Grid) Voltage.	4.5	4.5	4.5	volts
Grid-No.1 Resistor	33000	33000	33000	ohms
Plate Resistance (Approx.)	0.5	0.4	0.2	megohm
Conversion Transconductance.	-	320	-	μ mhos
Grid-No.3 Voltage (Approx.) for conversion transconductance (μ mhos) =				
5.	-	-3	-	volts
0.5.	-	-4	-	volts
Plate Current.	-	0.35	-	ma
Grid-No.1 Current.	-	0.06	-	ma
Total Cathode Current.	-	1.6	-	ma

Oscillator Characteristics (Not Oscillating):

*With grids No.2 & No.4 connected to plate
and with heater voltage of 12.6 volts*

Plate and Grids-No.2 & No.4 Voltage.	12.6	volts
Grid-No.3 Voltage.	0	volts
Grid-No.1 Voltage.	0	volts
Amplification Factor between grid No.1 and grids No.2 & No.4 connected to plate	9.4	
Transconductance between grid No.1 and grids No.2 & No.4 connected to plate	3600	μ mhos
Cathode Current.	4.5	ma
Grid-No.1 Voltage (Approx.) for plate $\mu a = 10$	-3.7	volts

Maximum Circuit Values:

Grid-No.3-Circuit Resistance	10 max.	megohms
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^a With external shield JEDEC No.316 connected to cathode & grid No.6.

^b The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

→ Indicates a change.

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